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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,744	07/08/2005	Katsu Yamada	10873.1706USWO	1946
53148	7590	05/19/2006	EXAMINER	
HAMRE, SCHUMANN, MUELLER & LARSON P.C.			CHOI, WILLIAM C	
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MINNEAPOLIS, MN 55402			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/541,744	Applicant(s) YAMADA, KATSU	
	Examiner William C. Choi	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,9,11,13 and 14 is/are rejected.
- 7) ☒ Claim(s) 3-8,10 and 12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0705</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

Receipt of the Information Disclosure Statement (IDS) with copies of the references cited therein, was received on 7/8/2005. An initialized copy of the IDS is enclosed with this office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, applicant discloses "wherein a **single lens** is disposed closest to the object side in the fourth lens group". However, according to the Figures and tables in the specification, applicant discloses wherein a doublet or cemented lens is arranged closest to the object side in the fourth lens group, thereby rendering the claim vague and indefinite. Therefore, claim 11 was not considered on the merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Horiuchi (U.S. 6,344,932 B1).

In regard to claim 1, Horiuchi discloses a small zoom lens comprising: a first lens group that comprises a lens having a negative refractive power, a lens having a positive refractive power and a lens having a positive refractive power, arranged in that order from an object side, that has a positive refractive power as a whole (column 9, lines 24-25, Figure 1, "L1"), and that is fixed with respect to an image plane (column 9, lines 47-49); a second lens group that has a negative refractive power as a whole (column 9, lines 25-26, Figure 1, "L2"), and that causes a zooming action when moved along an optical axis (column 9, lines 32-35); an aperture stop that is fixed with respect to the image plane (column 9, lines 28-30 and column 14, lines 32-34, Figure 1, "SP"); a third lens group that comprises a lens having a positive refractive power and a lens having a negative refractive power, that has a positive refractive power as a whole (column 9, lines 26-27, Figure 1, "L3"), and that is fixed with respect to a direction of the optical axis when zooming and when focusing (column 9, lines 47-49); and a fourth lens group that has a positive refractive power as a whole, and that moves along the optical axis such that the image plane, which is displaced by a movement of the second lens group along

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the optical axis and by a movement of the object, is maintained at a constant position with respect to a reference plane (column 9, lines 27-28 & 35-40, Figure 1, "L4").

Regarding claim 2, Horiuchi discloses wherein the second lens group comprises at least one aspherical surface (column 14, line 31, Numerical Example 1, "R8"), and comprises a meniscus negative lens whose convex surface faces the object side, a lens having a negative refractive power and a lens having a positive refractive power, arranged in that order from the object side (Figure 1, "L2").

Regarding claim 13, Horiuchi discloses a digital camera using the claimed small zoom lens (column 1, lines 6-13).

Regarding claim 14, Horiuchi discloses a video camera using the claimed small zoom lens (column 1, lines 6-13).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Hamano (U.S. 6,763,186 B2).

In regard to claim 1, Hamano discloses a small zoom lens comprising: a first lens group that comprises a lens having a negative refractive power, a lens having a positive refractive power and a lens having a positive refractive power, arranged in that order

from an object side, that has a positive refractive power as a whole, and that is fixed with respect to an image plane (column 5, lines 47-49, Figure 1, "L1"); a second lens group that has a negative refractive power as a whole, and that causes a zooming action when moved along an optical axis (column 5, lines 49-51, Figure 1, "L2"); an aperture stop that is fixed with respect to the image plane (column 5, lines 59-60 and column 14, lines 22-23, Figure 1, "SP"); a third lens group that comprises a lens having a positive refractive power and a lens having a negative refractive power, that has a positive refractive power as a whole, and that is fixed with respect to a direction of the optical axis when zooming and when focusing (column 5, lines 51-53, Figure 1, "L3"); and a fourth lens group that has a positive refractive power as a whole, and that moves along the optical axis such that the image plane, which is displaced by a movement of the second lens group along the optical axis and by a movement of the object, is maintained at a constant position with respect to a reference plane (column 5, lines 53-55, Figure 1, "L4").

Regarding claim 9, Hamano discloses wherein the fourth lens group comprises at least one aspherical surface (column 14, lines 33-34, First Numerical Example, "R25") and a pair of cemented lenses (Figure 1, "L4"), and comprises a lens having a positive refractive power, a lens having a negative refractive power and a lens having a positive refractive power, arranged in that order from the object side (Figure 1, "L4").

Allowable Subject Matter

Claims 3-8, 10 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claim 4: a small zoom lens comprising four lens groups as claimed, specifically wherein the third lens group comprises at least one aspherical surface, and comprises a meniscus negative lens whose concave surface faces the object side and a lens having a positive refractive power, arranged in that order from the object side.

The prior art fails to teach a combination of all the claimed features as presented in claim 4: a small zoom lens comprising four lens groups as claimed, specifically wherein the third lens group satisfies the condition: $4.01 < |f_3/f_4| < 60$.

The prior art fails to teach a combination of all the claimed features as presented in claim 5: a small zoom lens comprising four lens groups as claimed, specifically wherein the third lens group satisfies the condition: $14 < |f_3/f_w| < 210$.

The prior art fails to teach a combination of all the claimed features as presented in claim 6: a small zoom lens comprising four lens groups as claimed, specifically wherein the third lens group satisfies the condition: $3 < |f_3/BF_w| < 55$.

The prior art fails to teach a combination of all the claimed features as presented in claim 7: a small zoom lens comprising four lens groups as claimed, specifically wherein the third lens group satisfies the condition: $0.85 < |f_{31}/f_{32}| < 1.5$.

The prior art fails to teach a combination of all the claimed features as presented in claim 8: a small zoom lens comprising four lens groups as claimed, specifically wherein the third lens group satisfies the conditions: $|n_{d31}-n_{d32}|<0.15$ and $|v_{d31}-v_{d32}|<3.0$.

The prior art fails to teach a combination of all the claimed features as presented in claim 10: a small zoom lens comprising four lens groups as claimed, specifically wherein when a refractive power of the surface of the fourth lens group that is closest to the object side is Φ_{41} and the maximum image height is RIH and satisfies the condition: $0.005<\Phi_{41}/RIH<0.035$.

The prior art fails to teach a combination of all the claimed features as presented in claim 12: a small zoom lens comprising four lens groups as claimed, specifically wherein the fourth lens group comprises a cemented lens constituted by a lens having a positive refractive power and a lens having a negative refractive power, and a single lens having a positive refractive power, arranged in that order from the object side, and when a refractive power of the surface of the cemented lens that is closest to the object side is Φ_{41} and a refractive power of the surface of the cemented lens that is closest to the image side is Φ_{43} and satisfies the condition: $0.025 < (\Phi_{41}-\Phi_{43})/R_{1H} < 0.045$.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (571) 272-2324. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on (571) 272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

W.C.

William Choi
Patent Examiner
Art Unit 2873
May 15, 2006


RICKY MACK

SUPERVISORY PATENT EXAMINER